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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,583	01/11/2001	Masahiko Matsudo	33082M065	8388

7590 03/31/2004

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1850 M Street, N. W., Suite 800  
Washington, DC 20036

EXAMINER
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NGUYEN, KHIEM D

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/757,583	Applicant(s) MATSUDO ET AL.	
	Examiner Khiem D Nguyen	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 12-14 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 8, 15 and 22-27 is/are rejected.
- 7) ☒ Claim(s) 9-11 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \*   c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

Applicants' arguments filed December 18<sup>th</sup>, 2003 have been fully considered but they are not persuasive.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 15 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi et al. (U.S. Patent 6,277,720) in view of Schuegraf et al. (U.S. Pub. 2003/0062566).

In re claims 8, 15, and 22-27, Doshi et al. disclose in **figures 1-3k** and related text a method for preparing a gate electrode/wiring, which comprises a step of depositing a tungsten silicide layer (**figure 3a: 24**) on a polysilicon layer (**figure 3a: 22**); a step of depositing a silicon layer (**figure 3a: 26 and 30**) on said tungsten silicide layer (col. 7, lines 29-51 and **figures 3a-k**) wherein the silicon layer has a thickness of 65 to 250 angstroms (col. 8, lines 8-22); forming a passivation film (**figure 3c: 14**) on the silicon layer; and a side wall oxidizing step (col. 7, lines 55-65) of forming a silicon oxide film (**figure 3a: 11**) on a side wall of a gate electrode/wiring layer including the polysilicon layer and the tungsten silicide layer.

Art Unit: 2823

**Doshi et al.** do not explicitly disclose wherein the tungsten silicide layer includes phosphorous atoms as recited in independent claims 24 and 27.

**Schuegraf et al.** disclose a method for preparing a gate electrode/wiring, which comprises: a step of depositing a tungsten silicide layer (**figure 6: 20b**) on a polysilicon layer (**figure 6: 18b**), and a step of depositing a silicon layer (**figure 6: 35**) on the tungsten silicide layer (page 2, paragraphs [0027]-[0030]) wherein the tungsten silicide layer includes phosphorous atoms (page 2, paragraph [0031]).

***Allowable Subject Matter***

Claim 1-7, 12-14, and 19-21 are allowed.

Claims 9-11 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Amendment***

***Response to Applicant's Arguments***

Applicants' arguments filed December 18<sup>th</sup>, 2003 have been fully considered but they are not persuasive.

In response to Applicants' argument that the cited prior art fails to provides any teaching, hint or suggestion regarding the claimed range of phosphorous containing gas, which has not been established as a "result effective variable" as recited in claims 1 and 2. The argument is persuasive and thus claims 1 and 2 are allowed.

In response to Applicant's argument that Doshi fails to hint, suggest, or teach certain features present in claims 8, 12, 15, and 22-27, examiner respectfully disagree.

Art Unit: 2823

Applicants are directed to pages 2-3 presented in this Office Action, where Doshi et al. in view of Schuegraf et al. disclose all the features as recited in present claims 8, 15, and 22-27. The Hashimoto et al. reference was only being used as a secondary reference for the deficit claim limitation as cited in claim 12 regarding on the short-time annealing step. Since claim 12 is allowed, the Hashimoto et al. reference is no longer being considered in the present Office Action.

For these reasons, examiner holds the rejection proper.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

Art Unit: 2823

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.  
March 29, 2004

A handwritten signature in black ink, appearing to read 'W. David Coleman', with a long horizontal flourish extending to the right.

**W. DAVID COLEMAN  
PRIMARY EXAMINER**